Editorials

Continuing interest in the Franklin expeditions

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The British seem obsessed with gallant failure. Two of their most remembered explorers are Robert Falcon Scott and John Franklin. Both led inadequately planned expeditions with insufficient backup, took incredible risks and captured the nation's fancy.

Had Scott and Franklin been successful, achieved their goals and lived to tell the tale, they would have earned their rightful place in the annals of history — and been forgotten. Instead, they have remained in the public eye. The spate of articles, books and television programs about them has no end.

Scott was the typical Antarctic example and Franklin the typical Arctic example of tragic failure. Scott, whose expedition lasted from 1911 to 1912, perished with his four men while returning from the South Pole, which Roald Amundsen had reached 1 month before. Franklin, whose expedition lasted from 1845 to 1848, perished with 128 men, some of whom "forged the last link [of the Northwest Passage] with their lives".[1] That all the men on both expeditions died has intrigued the public's imagination.

In this issue of *CMAJ* (pages 115 to 117) is the autopsy report on John Torrington, one of the first of Franklin's men to die. Much more than a "dry-bones" scientific report, it must be placed in the perspective of Franklin's three expeditions — the first two by land and the third by sea — all of which aimed to discover the long-sought Northwest Passage to the riches of the Orient.

During the first expedition, from 1819 to 1822, John Franklin and Robert Hood meticulously mapped about 1050 km of Arctic coastline. Franklin exceeded prudence by a wide margin, continuing with dogged determination until he had little chance of getting back alive. His persistence led to the death of Hood and 10 others of his party of 20 and to near-fatal starvation of the remainder.[2] In Franklin's defence Neatby[3] said that Franklin "could have turned back from the coast only at the cost of professional ruin. It would have implied a censure on those who had planned the expedition, and would have wasted the money and effort that had already been expended. . . . He had put a roof on the map of Canada, and given a definite shape to the North American Continent."

In the 1825–27 expedition, Franklin returned to the north with Dr. John Richardson and George Back. Richardson mapped 1390 km of coastline between the mouths of the Mackenzie and Coppermine rivers, while Franklin, because of poor weather, mapped only 600 km of ocean shoreline west of the Mackenzie River and failed to meet Beechey's sledge party sent from Cape Barrow.[4] This expedition achieved unprecedented scientific success, and the information obtained resulted in the publication of six volumes that catalogued the flora and fauna of northwestern Canada.[5,6]

In 1845 Franklin set out on his third and final expedition to complete mapping of the northern coast of the continent and to define the Northwest Passage. At 58 years of age he was really too old for such a command. His two ships, *HMS Erebus* and *HMS Terror*, provisioned for 3 years, carried 68 t of flour, 18 t of biscuits, 16 t each of beef, pork and preserved meat, nearly 12 t of sugar, 10 t of soup and 4½ t each of lemon juice and chocolate.[7] Every previous naval expedition that had entered the area, including William Edward Parry's 1819 sailing voyage to Melville Island, 800 km past the bounds of the known world, had returned without any major mishap; Franklin's expedition was to be the exception. After the *Erebus* and *Terror* had been imprisoned for 2 years in the ice west of King William Island 105 survivors left to walk south (almost the worst possible direction) to their deaths.

What do we know of the grim fate of Franklin's third expedition? Very little. As Johnson said, "the sad fact remains that not one scrap of the naval or scientific records of this, the most elaborate, best equipped, best supplied and best staffed scientific expedition ever sent out up to 1845 has yet been found".[8]

In 1854 Dr. John Rae learned third-hand from the Eskimos at Pelly Bay that all Franklin's men had died and that some had first resorted to

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cannibalism. Rae brought back plates, forks and spoons that had the initials of the officers from the two ships. Rae and his men shared the $10 000 reward for determining the final fate of Franklin's men.[9]

In 1859 Lieutenant William Robert Hobson of the Royal Navy, sledging with his crew along the northwest shore of King William Island, found a printed naval form in a metal cylinder at the foot of a pile of crumbled stone. Around the borders in ink was a simple message:[2]

> April 25, 1848. — H.M. ships *Terror* and *Erebus* were deserted on the 22nd April, 5 leagues NNW. of this, having been beset since 12th September, 1846. The officers and crews, consisting of 105 souls, under the command of Captain F.R.M. Crozier, landed here in lat. 69 37 42 N., long. 98 41 W. Sir John Franklin died on the 11th June, 1847; and the total loss by death in the expedition has been to this date 9 officers and 15 men. — James Fitzjames, Captain, *H.M.S. Erebus.*

On an earlier search, in August 1850, Lieutenant Edwin J. De Haven, from the American search ships *Advance* and *Rescue*, went ashore on tiny Beechey Island off the southeast coast of Devon Island to examine a cairn. No message remained in the cairn, but there was evidence of Franklin's first winter quarters, from 1845 to 1846, and three graves.

In 1981 and 1982 Owen B. Beattie,[10] a professor of physical anthropology at the University of Alberta, Edmonton, made archeologic surveys on foot along the southern and northwestern coasts of King William Island. He located the fragmentary skeletal remains of at least seven of Franklin's men, whose bones had lain there for more than 130 years. Some bones showed evidence of scurvy, and the right femur of one crewman revealed cut marks, hinting at cannibalism.

The autopsy report in this issue of *CMAJ* is necessarily less dramatic than Amy and Beattie's oral presentation at the Royal College of Physicians and Surgeons of Canada meeting in Vancouver in September 1985. There, a vivid colour photograph of the corpse of John Torrington was shown large as life on a screen. Although Torrington's body had lain in permafrost for 136 years, the clothing had changed little from the day of burial. The body was even more life-like than a corpse in a morgue soon after death. Because of slight dehydration, the eyelids were open and Torrington was looking at the audience. Also, his lips were parted, and he was smiling at us. Altogether an eerie sight.

The preservation of the tissue as seen with light microscopy was somewhat disappointing. The brain was totally autolyzed. Such organs as the lungs showed preservation of macrostructure but loss of cellular detail. A fibrocalcific granuloma evidently represented healed tuberculosis. The amount of anthracosis and emphysema present was unusual for a stoker of only 20 years of age. Even if Torrington had worked as an underground coal miner for several years before joining the navy, one would not have expected changes of this degree.

Not surprisingly, there were also artefacts: tiny yellow-white nodules containing collagen fibres, presumably related to postmortem decomposition. No silica was present in the fibres. The levels of lead in the bone, abnormal for the 1980s, may have been normal for the 1840s.

The worldwide interest generated by this exhumation, even though it failed to establish the cause of Torrington's death, has elicited offers of future assistance from electron microscopists, virologists, immunologists and others. More detailed studies will be carried out on tissue when the remaining two bodies are exhumed. Mindful of the definitive conclusion of arsenic poisoning that resulted from the 1967 disinterment of the less well preserved body of American explorer Charles Francis Hall, in northwest Greenland,[11] we all await with interest the results of the next Amy-Beattie expedition.

Amy and Beattie deserve great credit for their meticulous attention to detail in complying with all regulations and contacting all levels of government involved as well as descendants or collateral descendants now living in England. Delicate sensibilities have been taken into account. Torrington's remains were promptly reinterred.

The autopsy of Torrington is of greater historical significance than is apparent from casual reading of the simple autopsy report. Never before has a well-preserved body from such an important expedition been studied after so long a time.

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